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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,413	09/28/2006	Joachim J. Kahlert	PHUS040178US3	6122

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EXAMINER	
NGO, CHUONG A	
ART UNIT	PAPER NUMBER
2617	
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05/14/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/599,413	KAHLERT ET AL.	
	Examiner	Art Unit	
	CHUONG A. NGO	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *2,3,5,12,16,18-20,22 and 23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6-11,13-15,17,21 and 24-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 9-11, 13-15, 17, 21, 24-30 have been considered but are moot in view of the new grounds of rejection.

2. Applicant's arguments with respect to claims 1, 4, 6-8 have been considered but they are not persuasive.

3. As a first matter, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **Page 17, Applicant relies on page 6, lines 10-20**:

> A velocity determining means or computer routine or algorithm 66 compares location results of the periodic scanning and determines speed and direction of movement of the mobile device 12 or any other mobile device within the defined space 16. Based on the speed and direction of the mobile device, a future position predicting means or computer routine or algorithm 68 predicts future positions of the mobile device as well as projected future signal strengths between the mobile device and access points of the cell in which the mobile device is located and adjacent cells. If it is determined that the mobile device 121 is approaching a new position, e.g. the position P2, at which the map 42 shows a different access point will have stronger signal, the access point assigning means 60 assigns the mobile device 121 a new primary communication access point which, preferably, has the strongest signal **(emphases added)**.
>
> **And page 7, lines 18-24:**
>
> the arbitration means 70 projects how long the mobile unit will be in the new access point region from the trajectory of its projected velocity and the map. If the projected trajectory will only pass briefly through the new zone without loosing satisfactory signal strength from its current access point or the next yet projected access point, the handoff from the current access point to the next access point and from the next access point to the next yet access point can be skipped in favor of a handoff directly from the current access point to the third next yet access point **(emphases added)**).

are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by

combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Applicant argues Sugiura and Bing do not disclose i.e. the tracking means tracks the movement of the selected mobile unit by periodically scanning the frequencies of the assigned access points adjacent the calculated location and predicts future locations of the selected mobile unit; wherein the assigning means assigns the nearby access points based on the predicted location of the selected mobile unit and the map".

Examiner very kindly directs the Applicant to **Sugiura** i.e. "the tracking means tracks the movement of the selected mobile unit by periodically scanning the frequencies of the assigned access points adjacent the calculated location" **(see Sugiura, col. 18, lines 40-67, Col. 19, lines 1-7, where Sugiura discuses The third embodiment provides a radio mobile station position detection method in which the user carrying a mobile station finds, through the mobile station, its own present location or the position of a different mobile station, therefore, Sugiura is teaching tracking the movement of the mobile unit)** and "predicts future locations of the selected mobile unit" **(see Sugiura, Col. 19, lines 1-7, where Sugiura discuses a position estimation processing section 521 for estimating the position of the mobile stations 501, 507 on the basis of the measured radio strength values through the use of the stored correlation, and col. 21, lines 22-43, a method is**

available to calculate the moving speed on the basis of the position obtained through the last estimation and the time of the estimation and the present position and the present time to decide whether or not the calculated speed is appropriate for the user carrying the mobile station or to draw the locus of the past position history to decide the appropriateness on the basis of the degree (an angle of a moving vector or the like) of the deviation in the moving direction indicated by the locus, therefore, Sugiura is teaching predicts future locations technique); "wherein the assigning means assigns the nearby access points based on the predicted location of the selected mobile unit and the map" **(see Sugiura, col. 14, lines 52+, the measuring points are indicated with points on a map, the mobile station 101 is transferred to the indicated points in the order of measurements, i.e., in the order of the numbers of the measuring points, where the mobile station transmission and reception section 104 receives radio waves from the base stations 105, 109 and 110 and the radio strength measuring section 103 measures the reception radio strength levels of the signals therefrom. The mobile station transmission and reception section 104 transmits the measurement data to the base station 105 which produces the highest radio strength level, and col. 19, lines 66-67, col. 20, lines 1-41, in the case that in the mobile station A the instructions for the position of the mobile station B, together with the identification number of the mobile station B, are given, the position inquiry section 505 gives instructions to the transmission and reception section 506 to transmit the inquiry request and the identification number of the target mobile**

station through the base station 513 to the control station 516. In the control station 516, the communication control section 518 receives these information and the control section 517 analyzes the reception data to make a decision to that it is an inquiry request for the position of the mobile station B and hands the data over to the radio strength report requesting section 520).

Applicant argues "Bing cannot remedy these deficiencies of Sugiura, because Bing is not even related to tracking a current location, much less to predicting future locations". Examiner agrees with applicant that Bing is not even "related to tracking a current location, much less to predicting future locations". However, Examiner did not say Bing teaches "tracking a current location or predicting future locations". Examiner recited Bing because of Sugiura does not particularly discloses "each access point operating at a dedicated frequency different from the dedicated frequency of its nearest neighbor access points" **(see Bing, Paragraph [0027], where Bing discuses adjacent to the central stations communicate with their subscriber stations in respectively different frequency bands, so that communication within one supply area does not interfere with the adjacent supply areas)**.

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, the rejection is maintained.

5. The examiner has updated the rejection to further clarify and has not changed the interpretation of the rejection.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 4, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6359587 (hereinafter Sugiura) in view of US Patent Application Public 20040023649 (hereinafter Bing).

Regarding claim 1, Sugiura discloses "A communications system" **(see col. 12, Fig. 4)** comprising:

Sugiura discloses "a plurality of mobile wireless units movably located within a defined space of a wireless local area network" **(see col. 12, lines 65-67, Fig. 4, Sugiura discuses plurality of mobile wireless units as radiocommunication system, therefore, it has plurality of mobile units)**;

Sugiura discloses "a plurality of fixed access points disposed at known locations in the defined space **(see col. 14, lines 36-51, and Fig. 2, Sugiura discuses plurality of fixed access points as base stations 202, 203, 204 respectively having radio zones 205, 206, 207)**;

Sugiura discloses "a means for tracking movement of at least one mobile device within the defined space" **(see col. 18, Lines 40-67, col. 19, lines 1-7)** including:

Sugiura discloses "a memory storing a map of the access points and relative signal strengths of signals from the access points at predefined locations in the defined space" **(col. 8, Lines 33-54)**,

Sugiura discloses "a means for scanning identified scanning frequencies of access points nearby a selected one of the mobile wireless units to measure actual signal strengths between the selected mobile units" **(col. 18, Lines 40-67, col. 19, Lines 1-7)** and Sugiura discloses "each of the nearby access points" **(col. 18, Lines 40-67, col. 19, Lines 1-7)**, and

Sugiura discloses "a means for calculating a location of the selected mobile relative to the map by comparing the actual signal strengths with the map of relative signal strengths at predefined locations in the defined space" **(see col. 10, lines 34-52)**;

Sugiura discloses "a means for assigning the nearby access points with strongest signals to at the calibrated location to the selected mobile unit based on the map of relative strengths in the defined space and communicating the dedicated frequencies of the nearby access points to the selected mobile unit" **(see col. 28, Lines 17-39, Sugiura discuses the calibrated location as learning the signal strength related to a plurality base stations)**;

Sugiura discloses "wherein the tracking means tracks the movement of the selected mobile unit by periodically scanning the frequencies of the assigned access points adjacent the calculated location" **(see Sugiura, col. 18, lines 40-67, Col. 19, lines 1-7, where Sugiura discuses The third embodiment**

provides a radio mobile station position detection method in which the user carrying a mobile station finds, through the mobile station, its own present location or the position of a different mobile station, therefore, Sugiura is teaching tracking the movement of the mobile unit) and "predicts future locations of the selected mobile unit" **(see Sugiura, Col. 19, lines 1-7, where Sugiura discuses a position estimation processing section 521 for estimating the position of the mobile stations 501, 507 on the basis of the measured radio strength values through the use of the stored correlation, and col. 21, lines 22-43, a method is available to calculate the moving speed on the basis of the position obtained through the last estimation and the time of the estimation and the present position and the present time to decide whether or not the calculated speed is appropriate for the user carrying the mobile station or to draw the locus of the past position history to decide the appropriateness on the basis of the degree (an angle of a moving vector or the like) of the deviation in the moving direction indicated by the locus, therefore, Sugiura is teaching predicts future locations technique)**;

Sugiura discloses "wherein the assigning means assigns the nearby access points based on the predicted location of the selected mobile unit and the map" **(see Sugiura, col. 14, lines 52+, the measuring points are indicated with points on a map, the mobile station 101 is transferred to the indicated points in the order of measurements, i.e., in the order of the numbers of the**

measuring points, where the mobile station transmission and reception section 104 receives radio waves from the base stations 105, 109 and 110 and the radio strength measuring section 103 measures the reception radio strength levels of the signals therefrom. The mobile station transmission and reception section 104 transmits the measurement data to the base station 105 which produces the highest radio strength level, and col. 19, lines 66-67, col. 20, lines 1-41, in the case that in the mobile station A the instructions for the position of the mobile station B, together with the identification number of the mobile station B, are given, the position inquiry section 505 gives instructions to the transmission and reception section 506 to transmit the inquiry request and the identification number of the target mobile station through the base station 513 to the control station 516. In the control station 516, the communication control section 518 receives these information and the control section 517 analyzes the reception data to make a decision to that it is an inquiry request for the position of the mobile station B and hands the data over to the radio strength report requesting section 520);

Sugiura discloses "wherein the scanning means only scans the frequencies of the assigned nearby access points." **(See col. 16, Lines 21-40, Sugiura discuses scanning as detection function)**.

Although, Sugiura does not particularly discloses "each access point operating at a dedicated frequency different from the dedicated frequency of its

nearest neighbor access points". In an analogous field of endeavor, attention is directed to Bing, which teaches "each access point operating at a dedicated frequency different from the dedicated frequency of its nearest neighbor access points" **(see Bing, Paragraph [0027], where Bing discuses adjacent to the central stations communicate with their subscriber stations in respectively different frequency bands, so that communication within one supply area does not interfere with the adjacent supply areas)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was make to modify the Sugiura invention, and have each access point operating at a dedicated frequency different from the dedicated frequency of its nearest neighbor access points, as taught by Bing, thereby, providing access methods which define the right of an individual station to access the medium are used in order to allow a number of stations to access a shared transmission medium in communications systems of any desired type, as discussed by Bing, (see paragraphs [0004]-[0010]).

Regarding claim 4, Sugiura discloses "wherein the position tracking means includes: a velocity estimating means for determining speed and direction of movement of the selected mobile unit" **(see col. 21, Lines 22-42)**.

Regarding claim 6, Sugiura discloses "further including: a means for determining a degree of certainty of an accuracy of the calculated location" **(see col. 8, Lines 38-58)**.

Regarding claim 7, Sugiura discloses "wherein the number of nearby access points assigned to the selected mobile unit is a function of location accuracy certainty and the tracking means tracks the movement of the at least one mobile unit by periodically scanning only the frequencies of the access points assigned to the selected mobile unit" **(col. 18, Lines 40-67, col. 19, Lines 1-7)**.

Regarding claim 8, Sugiura discloses "a means for measuring a plurality of initial signal strengths at predefined locations within the defined space" **(see Sugiura, col. 18, lines 40-67, Col. 19, lines 1-7)**;

"a means for mapping the initial signal strengths in relation to predefined locations in the defined space" **(col. 8, Lines 33-54)**;

"a means for identifying locations and scanning frequencies of the access points in the defined space" **(see col. 10, lines 34-52)**; and

"a means for creating the map and loading in the memory." **(col. 18, Lines 40-67, col. 19, Lines 1-7)**.

8. Claims 9-11,13-15,17,21,24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 96359587 (hereinafter Sugiura) in view of US Patent Application Public 20030013454 (hereinafter Hunzinger).

Regarding claims 9, 24, 27, Sugiura disclose "In a wireless local area network" **(see col. 14, lines 36-52)**, a method comprising: "tracking movement of a selected mobile device within a defined space using wireless access points" **(see col. 18, Lines 40-67, as shown in FIG. 5 mobile stations A501, B507 are**

equipped with mobile station control sections 502, 508 for controlling the operations of the mobile stations A501, B507, radio strength measuring sections 503, 509 for measuring the radio strength levels of signals received from base stations, mobile station transmission and reception sections 506, 512 for conducting transmission and reception of signals to and from the base stations), "each access point having a dedicated zone different from the dedicated zone of nearby access points" **(see col. 14, lines 36-52, Fig. 2, where Sugiura discuses as control zones 205, 206, 207, These well in the art these can be dedicated frequency)**, the tracking including: "measuring actual signal strengths at the dedicated zone of a current plurality of the access points neighboring the last calculated location of the selected mobile device" **(see col. 1 lines 37-49, the present location of the mobile station is specified to a smaller area than the radio zone of one base station on the basis of the mobile station reception radio strength levels from the plurality of base stations and the electric field strength map in the radio zone of each of the base stations)**, and "calculating a current location of the mobile device by comparing the measured actual signal strengths with a predefined map of relative signal strengths at predefined locations in the defined space" **(see col. 13, lines 66-67 and col. 14, lines 1-35, First Embodiment)**; and "based on the predefined map and the calculated current location, identifying from the predefined map an updated current plurality of the access points neighboring the current calculated location with the strongest signals at the current calculated

location" **(see col. 7, lines 64-76 and col. 8, lines 1-32, a mobile station is equipped with radio strength measuring means for measuring the reception radio strength levels from a plurality of base stations, whereas a control station is provided with position storage means for storing the position of each of measuring points and an identifier of the mobile station corresponding to the measuring point);** and "assigning the updated current plurality of the access points with strongest signals to the selected mobile device" **(see col. 9, lines 38-67 and col. 1-12, the mobile station is equipped with learning result storage means for storing the parameters for a neural network conveyed from the control station and position calculation means for constructing a neural network using the parameters stored in the learning result storage means to detect its own position on the basis of the reception radio strength levels from a plurality of base stations measured at an arbitrary point through the use of the constructed neural network)**;

Sugiura discloses access point having a dedicated zone. However, Sugiura does not specifically disclose access point having a dedicated frequency. In an analogous field of endeavor, Hunzinger teaches "access point having a dedicated frequency" (see paragraph [0011], Hunzinger discuses as dedicated channel),

"performing wireless communication with the selected mobile device using a communication access point selected from the access points; and handing off the selected mobile device from one communication access point to another

communication access point based on the predefined map and the calculated current location" (see Hunzinger, paragraphs [0029], .. the present invention provide a future activity indicator including the direction and magnitude of predicted future activity relative to current activity levels (e.g., higher or lower, and by how much) to enable the MS to even more accurately predict which BS (network access point) will be best to connect/handoff to (receive forward frames from), [0040], .. CDMA, TDMA, FDMA, GSM, GPRS, and the like, [0042], .. the MS selects one or more potential network access points to receive from (i.e. the forward link active/eligible set). To select the best BS/sector from which to receive transmissions, the MS can determine the strength of the signal from the BS (e.g., the carrier to interference ratio C/I)); and handing off the selected mobile device from one communication access point to another communication access point based on the predefined map and the calculated current location".

It would have been obvious to one of ordinary skill in the art at the time of the invention was make to combine Sugiura invention, and have access point having a dedicated frequency, as taught by Hunzinger, thereby, providing a method and apparatus for generating and utilizing a relative future activity indicator that provides an indication of the direction and magnitude of the predicted future activity relative to current activity levels for the purpose of enhancing the selection of the source of received communications, as discussed by Hunzinger, (see paragraph [0027]).

Regarding claims 10, 28 Sugiura disclose "periodically measuring only the dedicated frequencies of the access points nearest to the last calculated location"**(see col. 28, Lines 57-67)**.

Regarding claims 11, 29, Sugiura disclose "periodically measuring the dedicated frequencies of the current plurality of the access points neighboring the last calculated location of the selected mobile device wherein said current plurality consists of three of the access points nearest the last calculated location" **(see col. 29, Line 56, Fig. 13, Ninth embodiment)**.

Regarding claims 13, 30, Sugiura disclose "estimating a speed and a direction of movement of the selected mobile device based on the tracking including at least the calculated current location and the last calculated location; and predicting a future location of the selected mobile device from the estimated speed and direction; wherein the handing off is based on the predicted future location and the map" **(see col. 21, lines 22-43)**.

Regarding claims 14, 26, Sugiura discloses "measuring a plurality of initial signal strengths at a plurality of measurement locations within a defined space" **(see Sugiura, col. 18, lines 40-67, Col. 19, lines 1-7)**;

"mapping the initial signal strengths in relation to the plurality of measurement locations in the defined space" **(col. 8, Lines 33-54)**;

"identifying a plurality of locations and scanning frequencies of the access points located in the defined space" **(see col. 10, lines 34-52)**; and

"combining the signal strengths at the plurality of measurement locations and the access point locations and the frequency assigned to each access point into the map" **(col. 18, Lines 40-67, col. 19, Lines 1-7)**.

Regarding claims 15, 21, Sugiura disclose "determining a certainty of an accuracy of the calculated location of the mobile device" **(see col. 8, Lines 38-58)**.

Regarding claim 17, Sugiura disclose "comparing the determined certainty with a requested threshold" **(see col. 32, Lines 1-40, Fig. 14B)**.

Regarding claim 25, Sugiura disclose "a memory in which the map is stored and wherein the map depicts a location of each access point in defined space and relative signal strengths of signals from each of the access points at a multiplicity locations in the defined space" **(col. 8, Lines 33-54)**.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG A. NGO whose telephone number is 571-270-7264. The examiner can normally be reached on Monday through Thursday 6:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on 571-272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHUONG A NGO/
Examiner, Art Unit 2617

/KAMRAN AFSHAR/
Primary Examiner, Art Unit 2617